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Atty. Doc. No. 2003P15291US

### REMARKS

Applicants have amended claim 1, canceled claim 24, and added claims 25-26; the Examiner withdrew the previous allowance of claims 5 and 13-21. Thus, claims 1-4, 6-12, 22-23, and 25-26 are presented for examination. Applicants respectfully request reconsideration and allowance of the pending claims in view of the foregoing amendments and the following remarks.

#### Response To Rejections Under Section 103:

Claims 1 and 6-7 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Longo (USPN 4,450,184) in view of what would have been obvious to one of ordinary skill in the art the time the invention was made.

Claim 1 recites selecting a composite powder comprising an unbound homogeneous mixture of a first constituent comprising stabilized zirconia particles and a second constituent comprising particles of a ceramic material having a melting temperature sufficiently low so that the second constituent particles at least partially melt when applied with a low velocity oxygen fuel process. Longo does not disclose or suggest that a first such constituent and a second such constituent should be selected. Rather, as the Examiner correctly maintains, Longo discloses a composite powder that may comprise one or more of a laundry list of constituents (some of which meet Applicants' first constituent claim limitation and some of which meet Applicants' second constituent claim limitation) but does not disclose or suggest that the composite power is selected to be the particular mixture claimed by Applicants. Applicants claimed particular mixture selection is not a matter of mere design choice, rather, it provides for a long life coating having a relatively low incipient melting point. See e.g. p. 2 line 16 - p. 3 line 6.

Claim 1 further recites a second constituent comprising particles of a ceramic material having a melting temperature sufficiently low so that the second constituent particles at least partially melt when applied with a low velocity oxygen fuel process; and using the low velocity oxygen fuel process to apply the composite powder and apply the porous thermal barrier coating to a surface. The Examiner correctly asserts that Longo teaches that its particles can be applied by conventional powder-type flame spray equipment, and the Examiner then parenthetically

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notes that this reads on Applicants claimed low velocity oxygen fuel process (to which Applicants respectfully disagree). While Longo does teach that conventional powder-type flame spray equipment can be used, such conventional spray equipment taught by Long is unsuitable for Applicants claimed spray process (see e.g. p. 2 lines 16-20), which requires the claimed low velocity oxygen fuel process used with the particularly claimed powder mixture, as explained in Applicants specification. See e.g. p. 4 lines 17-30, p. 4 lines 1-16. Applicants also note that the Examiner indicated that the term "low velocity oxygen fuel process" to mean a combustion powder thermal spray process or powder flame spray process as described in the cited "Combustion Powder Thermal Spray Process (Flame Spray Process) document; Applicants respectfully submit that the term "low velocity oxygen fuel process" is properly construed by the specification in view of what those skilled in the art would understand.

Claim 1 has been amended to recite that that the composite powder comprises an unbound homogeneous mixture comprising a first and second constituent. Support for this amendment can be found in the specification at page 4 lines 7-9. In contrast, Longo teaches away from this limitation by specifying that the invention is directed to hollow sphere particles that are made by fusing the partial constituents into a partially or fully homogenized hollow structure. See e.g. Col. 3 lines 56-59, Col. 2 lines 53-55. Longo further explains that its hollow sphere powders are advantageous over non hollow sphere powders, thereby teaching away from using non hollow sphere powders. See e.g. Col. 4 lines 43-60.

Thus, Applicants respectfully submit that amended claim 1, and claims 6-7, 23, which depend thereon are patentable.

Claims 2-3 and 8-10 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Longo in view of Japan 2002-275615. Claims 4 and 11-12 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Longo in view of Spitsberg (2003/0027012). For the reasons discussed in connection with claim 1 above, Applicants respectfully submit that claims 2-3, 8-10, 4 and 11-12 which depend on claim 1, are patentable over Longo in view of the Japan reference or Spitsberg.

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Claims 5, 13 and 22 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Longo in view of Nagaraj (2005/0191516). Regarding claim 22, for the reasons discussed in connection with claim 1 above, Applicants respectfully submit that claim 22, which depends on claim 1 is patentable over Longo in view of Spitsberg. Regarding independent claims 5 and 13, claims 5 and 13 recite selecting a composite powder comprising a particularly claimed mixture of constituents and further recite applying the composite powder with a low velocity oxygen fuel process. Applicants respectfully submit that neither Longo nor Spitsberg, alone or in combination, teach or suggest the limitations recited in independent claims 5 and 13.

Claims 14-15 and 17-19 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Longo in view of Nagaraj or Longo '343 and further in view of the Japanese references. Claims 16 and 20-21 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Longo in view of Nagaraj or Longo '343 and further in view of Nagaraj. For the reasons discussed in connection with claim 13 above, Applicants respectfully submit that claims 14-15, 17-19, 16 and 20-21, which depend on claim 13, are patentable over Longo in view of Nagaraj or Longo '343 and further in view of the Japan reference or Nagaraj.

#### Discussion of New Claims 25-26:

For the reasons discussed above, Applicants respectfully submit that claims 25-26 are patentable and respectfully request allowance of claims 25-26.

#### Conclusion

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§

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1.16 (c), 1.17(a)(1) and 1.20 for total claims in excess of 20, or credit any overpayments to  
Deposit Account No. 19-2179.

Respectfully submitted,

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